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MILLEN, WHITE, ZELANO & BRANIGAN, P.C.
2200 CLARENDON BLVD.
SUITE 1400
ARLINGTON, VA 22201

EXAMINER	
AUGHENBAUGH, WALTER	

ART UNIT	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/601,832	WERTH, MICHAEL	
	Examiner	Art Unit	
	WALTER B. AUGHENBAUGH	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-9,11,13 and 15-20* is/are pending in the application.

4a) Of the above claim(s) *8 and 19* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9,11,13,15-18 and 20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgement of Applicant's Amendments

1. The amendments made in claims 1, 2, 6, 11, 13, 15 and 20 in the Amendment filed July 10, 2008 have been received and considered by Examiner.

WITHDRAWN REJECTIONS

2. The 35 U.S.C. 112 rejection of claim 6 made of record in the previous Office Action mailed January 11, 2008 has been withdrawn due to Applicant's amendment in claim 6.

3. The 35 U.S.C. 102 rejection of claims 14, 20 and 21 made of record in the previous Office Action mailed January 11, 2008 has been withdrawn due to Applicant's amendment in claim 20 and due to Applicant's cancellation of claims 14 and 21.

REPEATED AND NEW REJECTIONS

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Heilmann et al. (USPN 6,004,311).

In regard to claim 13, Heilmann et al. teach the claimed pipe where the inner layer (layer 2a) comprises a copolymer having polyamide blocks and polyether blocks, where layers 2a and 2b comprise either, solely a copolymer having polyamide blocks and polyether blocks, or a blend of a copolymer having polyamide blocks and polyether blocks and polyethylene copolymers, both of which are thermoplastic polymers (col. 12, lines 26-43, particularly lines 38-41, and col. 10, lines 28-41). The base layer of Heilmann et al. (layer 4, col. 12, lines 41-43), which comprises a polyethylene copolymer, corresponds to the claimed polyolefin layer (col. 10, lines 28-41). Layer 2b of Heilmann et al. corresponds to the claimed outer layer , where the layer 2b comprises either, solely a copolymer having polyamide blocks and polyether blocks, or a blend of a copolymer having polyamide blocks and polyether blocks and polyethylene copolymers, both of which are thermoplastic polymers (col. 12, lines 26-43, particularly lines 38-41, and col. 10, lines 28-41).

6. Claim 20 is rejected under 35 U.S.C. 102(e) as being anticipated by Ito et al. (USPN 6,576,312). Ito et al. teach a pipe that corresponds to the claimed pipe. See, for example, col. 6, line 10-21. Polybutylene naphthalate is a polyester, so a block copolymer comprises a hard segment of polybutylene naphthalate and a soft segment of polyether is a polyetherester.

Claim Rejections - 35 USC § 103

7. Claims 1 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243).

In regard to claims 1 and 9, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of an unsealed metal flexible inner layer (liner, item 12, col. 8, lines 51-62, Fig. 7: Quigley et al. teach that the unsealed flexible inner layer [liner, item 12, col. 8, lines 51-62] comprises a wound [coiled] metal strip [col. 8, lines 43-53 and col. 1, lines 20-27]) and outer sealing layers, in which the outer sealing layers are, in succession: an inner layer formed from at least one thermoplastic polymer comprising a polyamide (composite layer, item 14, which comprises fiber and a matrix, where nylon, which is polyamide, is a suitable material for both the fibers and the matrix, where a thermoplastic material is a suitable material for the fibers, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8, and Fig. 7, and where aramid, which is also polyamide, is also a suitable material for the fiber (col. 10, lines 62-67 and Fig. 7)) and a polyolefin layer, item 58, where suitable materials for the polyolefin layer are polyethylene and polypropylene, both of which are polyolefins (col. 15, lines 38-44 and Fig. 7). Quigley et al. teach that suitable materials for the inner layer (composite layer, item 14) of the sealing layers are thermoplastic polymers such as polyamide (nylon-6) and polyethylene and polypropylene (which are both polyolefins) (col. 11, lines 3-7 and col. 10, lines 31-39).

Quigley et al. fail to explicitly teach that the material of the inner layer (composite layer, item 14) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a

polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

8. Claims 2, 11 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243).

In regard to claim 2, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 16, line 51-col. 17, line 13) consisting of an unsealed metal flexible inner layer (liner, item 12, col. 8, lines 51-62, Fig. 8: Quigley et al. teach that the unsealed flexible inner layer [liner, item 12, col. 8, lines 51-62] comprises a wound [coiled] metal strip [col. 8, lines 43-53 and col. 1, lines 20-27]) and outer sealing layers, in which the outer sealing layers are, in succession: an inner layer formed from at least one thermoplastic polymer comprising a polyamide (composite layer, item 14, which comprises fiber and a matrix, where nylon, which is

polyamide, is a suitable material for both the fibers and the matrix, where a thermoplastic material is a suitable material for the fibers, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8, and Fig. 8, and where aramid, which is also polyamide, is also a suitable material for the fiber (col. 10, lines 62-67 and Fig. 8)), a polyolefin layer, item 58, where suitable materials for the polyolefin layer are polyethylene and polypropylene, both of which are polyolefins (col. 15, lines 38-44 and Fig. 8), and, outside the polyolefin layer, item 58, an outer layer formed from at least one thermoplastic polymer (item 14', col. 16, lines 51-67, col. 10, lines 3-12, 31-39 and 62-67 and col. 11, lines 3-8 and Fig. 8). Since Quigley et al. teach that the layers 14 and 14' need not be identical (col. 16, lines 51-67), Quigley et al. teach that the layers 14 and 14' may be identical: in the instance where the inner layer 14 comprises polyamide, as discussed above, and the layers 14 and 14' are identical, the outer layer 14' comprises polyamide.

Quigley et al. fail to explicitly teach that the material of the inner layer (composite layer, item 14) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (the adhesion-promoting layer of Flepp et al. that is made from a mixture of a polyamide and a compatibilizer is a layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix since the compatibilizer is a polyolefin, col. 5, lines 28-29 and col. 6, lines 50-57). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide

matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the mixture of the inner layer since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known adhesion-promoting material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 11, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of sealing layers, in succession: an inner layer formed from at least one thermoplastic polymer (liner, item 12), where thermoplastics such as polyamide, polyethylene and polypropylene are suitable materials for the inner layer (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and Fig. 4) and where the inner layer would be in contact with the fluid being transported in the pipe if fluid were being transported in the pipe (Fig. 4 and col. 8, lines 43-53), a coextrusion tie layer (item 56, col. 14, lines 3-9 and 29-41, col. 17, lines 39-50 [which discloses that the pipe can be formed of coextruded polymers] and Fig. 4) and a polyolefin layer (composite layer, item 14, Fig. 4), where suitable materials for the composite layer are polyethylene and polypropylene (col. 10, lines 31-38 and col. 11, lines 3-7).

Quigley et al. fail to explicitly teach that the material of the inner layer (liner, item 12) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix or any of the other materials recited in claim 11.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a

polyamide matrix (inner layer comprising polyamide and an acid modified ethylene-alpha olefin copolymer impact strength modifier, col. 5, lines 18-36 and col. 6, lines 33-43 and 50-57, where the polyamide blended with an impact strength modifier corresponds to a blend of a polyamide and a polyolefin having a polyamide matrix). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the polyamide of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the polyamide of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

In regard to claim 13, Quigley et al. teach an offshore flexible pipe (item 10, col. 1, lines 20-42 and col. 8, lines 43-50) consisting of sealing layers, in succession: an inner layer formed from at least one thermoplastic polymer (liner, item 12), where thermoplastics such as polyamide, polyethylene and polypropylene are suitable materials for the inner layer (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and Fig. 5) and where the inner layer would be in contact with the fluid being transported in the pipe if fluid were being transported in the pipe (Fig. 5 and col. 8, lines 43-53), a coextrusion tie layer (item 56, col. 14, lines 3-9 and 29-41, col. 17, lines 39-50 [which discloses that the pipe can be formed of coextruded polymers] and Fig. 5), a polyolefin layer (composite layer, item 14, Fig. 5), where suitable materials for the composite

layer are polyethylene and polypropylene (col. 10, lines 31-38 and col. 11, lines 3-7), and an outer layer formed from at least one thermoplastic polymer (barrier layer, item 58) where thermoplastics such as polyamide are suitable materials for the outer layer (barrier layer, item 58) (col. 15, lines 38-44). Quigley et al. disclose inner layer (liner, item 12) and outer layer (barrier layer, item 58) as separate layers that can comprise one of a plurality of thermoplastic polymers (col. 8, line 51-62, col. 8, line 65-col. 9, line 14 and (col. 15, lines 38-44).

Quigley et al. fail to explicitly teach that the material of the inner layer (liner, item 12) of the sealing layers is a blend of a polyamide and a polyolefin having a polyamide matrix or any of the other materials recited in claim 13.

Flepp et al., however, disclose a multilayer pipe (col. 1, lines 6-9 and col. 5, lines 18-36) comprising an inner layer comprising a blend of a polyamide and a polyolefin having a polyamide matrix (inner layer comprising polyamide and an acid modified ethylene-alpha olefin copolymer impact strength modifier, col. 5, lines 18-36 and col. 6, lines 33-43 and 50-57, where the polyamide blended with an impact strength modifier corresponds to a blend of a polyamide and a polyolefin having a polyamide matrix). Therefore, one of ordinary skill in the art would have recognized to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the polyamide of the inner layer of Quigley et al. since a blend of a polyamide and a polyolefin having a polyamide matrix is a well known material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used the blend of a polyamide and a polyolefin having a polyamide matrix taught by Flepp et al. as the polyamide of the inner layer of Quigley et al. since a blend of a

polyamide and a polyolefin having a polyamide matrix is a well known material for use as the material of an inner layer of a multilayer hose as taught by Flepp et al.

9. Claims 4, 5, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Strassel et al. (USPN 5,601,893).

Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claims 2 and 14.

In regard to claims 4 and 15, Quigley et al. and Flepp et al. fail to explicitly teach that the polymers (A) and (B) are one of the polymers listed in claim 4 or 15.

Strassel et al., however, disclose a multilayered offshore flexible pipe (col. 1, lines 15-21 and col. 2, lines 55-63) that offers significant mechanical resistance especially to internal pressure thus permitting use of the pipe in offshore oil and gas production (col. 1, lines 15-21). Strassel et al. teach that polyamide is a suitable polymer for the outer layer, item 9, of the sheath (col. 5, lines 12-24) and specifically teach polyamide-11 (PA-11) as the polyamide of the outer layer, item 9 (col. 13, lines 20-40). Strassel et al. also teach that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes (col. 2, lines 13-16 and 28-31). Therefore, one of ordinary skill in the art would have recognized to have used PA-11 as polyamides (A) and (B) of the pipe of Quigley et al. and Flepp et al. since PA-11 is a well known polyamide for use as the material of layers in a multilayered offshore flexible pipe that offers significant mechanical resistance especially to internal pressure thus permitting use of the pipe in offshore oil and gas production

due to the fact that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes as taught by Strassel et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used PA-11 as polyamides (A) and (B) of the pipe of Quigley et al. and Flepp et al. since PA-11 is a well known polyamide for use as the material of layers in a multilayered offshore flexible pipe that offers significant mechanical resistance especially to internal pressure thus permitting use of the pipe in offshore oil and gas production due to the fact that PA-11 does not blister or inflate when in contact with live crude and that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes as taught by Strassel et al.

In regard to claims 5 and 16, Quigley et al., Flepp et al. and Strassel et al. teach the pipe as discussed above in regard to claims 4 and 15.

Quigley et al., Flepp et al. and Strassel et al. fail to explicitly teach that the pipe of Quigley et al. and Flepp et al., or the PA-11 of Strassel et al., contains a plasticizer.

Strassel et al., however, teach that plasticized PA-11 is leak-proof when used as the sheath material for flexible metal pipes (col. 2, lines 28-31). Therefore, one of ordinary skill in the art would have recognized to have added a plasticizer to the PA-11 of the pipe taught by Quigley et al., Flepp et al. and Strassel et al. in order to render the pipe leak-proof when used as the sheath material for flexible metal pipes for use in oil or gas extraction as taught by Strassel et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added a plasticizer to the PA-11 of the pipe taught by Quigley et al., Flepp et

al. and Strassel et al. in order to render the pipe leak-proof when used as the sheath material for flexible metal pipes for use in oil or gas extraction as taught by Strassel et al.

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Roeber et al. (USPN 5,858,492).

In regard to claim 6, Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claim 1.

Quigley et al. and Flepp et al. fail to teach that the pipe comprises a tie layer in which the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group.

Roeber et al., however, disclose a coupling (equivalently, tie) layer that couples a layer comprising a polyolefin molding composition layer to a layer comprising polyamide (col. 10, lines 41-54). Roeber et al. disclose that a suitable polymer for the coupling layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group (col. 5, lines 7-22 and 28-33) and that the coupling layer firmly bonds the polyolefin molding composition layer and the polyamide layer together (col. 10, line 54). Therefore, one of ordinary skill in the art would have recognized to have formed the pipe of Quigley et al. and Flepp et al. such that it has the tie layer of a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe of Quigley et al. and Flepp et al. such that it has the tie layer of a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Hill.

Quigley et al. and Flepp et al. teach the pipe as discussed above. Quigley et al. teach polyethylene as a suitable material of the polyolefin layer.

Quigley et al. and Flepp et al. fail to explicitly teach that the polyethylene is high density polyethylene.

Hill, however, discloses a multilayer pipe that is used to carry petroleum or oil (col. 1, lines 1-10) that consists of a layer of high density polyethylene that is directly bonded to a layer of polyamide (col. 5, lines 36-40). Therefore, one of ordinary skill in the art would have recognized to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

12. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Roeber et al. (USPN 5,858,492).

Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claim 11.

Quigley et al. and Flepp et al. fail to teach that the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group.

Roeber et al., however, disclose a coupling (equivalently, tie) layer that couples a layer comprising a polyolefin molding composition layer to a layer comprising polyamide (col. 10, lines 41-54). Roeber et al. disclose that a suitable polymer for the coupling layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group (col. 5, lines 7-22 and 28-33) and that the coupling layer firmly bonds the polyolefin molding composition layer and the polyamide layer together (col. 10, line 54). Therefore, one of ordinary skill in the art would have recognized to have formed the pipe of Quigley et al. and Flepp et al. such the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. that is located between the polyolefin layer and polyamide inner layer in order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the pipe of Quigley et al. and Flepp et al. such the tie layer is a functionalized polyolefin carrying a carboxylic acid or carboxylic acid anhydride functional group of Roeber et al. that is located between the polyolefin layer and polyamide inner layer in

order to firmly bond the polyolefin layer and polyamide inner layer together as taught by Roeber et al.

13. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Quigley et al. (USPN 6,357,485) in view of Flepp et al. (USPN 6,555,243) and in further view of Hill.

Quigley et al. and Flepp et al. teach the pipe as discussed above in regard to claim 11. Quigley et al. teach polyethylene as a suitable material of the polyolefin layer.

Quigley et al. and Flepp et al. fail to explicitly teach that the polyethylene is high density polyethylene.

Hill, however, discloses a multilayer pipe that is used to carry petroleum or oil (col. 1, lines 1-10) that consists of a layer of high density polyethylene that is directly bonded to a layer of polyamide (col. 5, lines 36-40). Therefore, one of ordinary skill in the art would have recognized to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used high density polyethylene as the polyethylene of the polyolefin layer of Quigley et al. and Flepp et al. since high density polyethylene is a known suitable material for use in a layer of a multilayer pipe that is used to carry petroleum or oil as taught by Hill.

Response to Arguments

14. Applicant's arguments regarding the 35 U.S.C. 103 rejection of claims 1 and 9 have been fully considered but are not persuasive.

Examiner agrees with Applicant's statements regarding the metal layer made in the first full paragraph of page 7 of the Amendment. However, one of ordinary skill in the art would have expected the composite material having a polyamide matrix of Flepp to bond to a metal layer (such as the metal layer of Quigley) because a polyamide layer (layer 14) is bonded to the metal layer of Quigley as discussed in the rejection of record: if a polyamide layer bonds to the metal layer of Quigley, it is reasonable to expect that a composite material that has a polyamide matrix will bond to that metal layer.

Applicant argues that the blend of Flepp has more than one polyamide. However, the open claim language (in regard to the claimed "blend") does not preclude more than one polyamide from the blend.

15. Applicant's arguments regarding the remainder of the 35 U.S.C. 103 rejections have been fully considered but are not persuasive. Applicant's arguments here depend upon Applicant's arguments regarding claims 1 and 9, which have been addressed above.

Conclusion

16. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is (571) 272-1488. While the examiner sets his work schedule under the Increased Flexitime Policy, he can normally be reached on Monday-Friday from 8:45am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Walter B Aughenbaugh /
Examiner, Art Unit 1794

10/25/08

/Rena L. Dye/
Supervisory Patent Examiner, Art Unit 1794